<u>WHAT IS CLAIMED IS:</u>

1.   A method of operating client equipment in operative communication with a content-based network, said equipment comprising at least at least one hardware option and at least one application running on said equipment, the method comprising:

 providing at least one API adapted to interface with said at least one hardware option;

 starting said at least one application;

 discovering said at least one option and said at least one API using said application; and

 selectively controlling said at least one option using said application via said API.

2.   The method of Claim 1, wherein said act of providing at least one API comprises:

 providing middleware having said API and a hardware registry; and

 disposing at least one entry associated with said at least one hardware option within said registry.

3.   The method of Claim 2, wherein said act of discovering said at least one option comprises accessing said registry using a software function.

4.   The method of Claim 3, wherein said network comprises a multi-channel distribution network of the hybrid fiber coax (HFC) type, said equipment comprises a digital set-top box, and said act of selectively controlling said at least hardware option comprises providing DVR functionality.

5.   The method of Claim 3, wherein said middleware is rendered in an object-oriented language, and said software function comprises a hardware registry interface object.

6.   The method of Claim 3, wherein said at least one entry comprises a plurality of entries relating to respective ones of said hardware options, and said act of accessing comprises iteratively searching said registry to discover each of said plurality of entries.

7.   The method of Claim 6, wherein said plurality of entries relate to different hardware options of the same general type, and said act of iteratively searching comprises using a name convention to selectively access individual ones of said different hardware options.

8.   A method of operating CPE within a content-based network, said CPE comprising a plurality of optional hardware features, middleware adapted to communicate with said hardware features via a plurality of APIs, and a hardware registry having a plurality of entries associated therewith and relating to respective ones of said hardware options, the method comprising;

disposing an application onto said CPE; and

running said application to:

    (i)   discover said registry, said entries and said plurality of APIs; and

    (ii)   access at least one of said hardware features via at least one of said

APIs.

9.   The method of Claim 8, wherein said middleware comprises a trusted application rendered in an object-oriented language, and said act of making a plurality of calls comprises making calls to objects of said middleware adapted to particularly access said registry.

10.   The method of Claim 8, wherein said act of disposing comprises providing retail CPE having said application already installed thereon.

11.   The method of Claim 8, further comprising controlling, via said application, said at least one hardware feature.

12.   CPE adapted for use within a content-based network, said CPE comprising:

a plurality of optional hardware features;

a software application;

middleware adapted to communicate with said software application and said hardware features via a plurality of APIs; and

a hardware registry having a plurality of entries associated therewith and relating to respective ones of said hardware options;

wherein said CPE is further adapted to:

run said application;

discover said registry, said entries and said plurality of APIs;

access at least one of said hardware features via at least one of said APIs; and

selectively control said at least one hardware feature using said application.

13.   Apparatus adapted for operation within a cable network, said apparatus comprising:

a processor;

a storage device operatively coupled to said processor;

first software running on said processor and adapted to control at least one function within said apparatus; and

at least one software application adapted to run on said processor;

wherein said first software is configured to:

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(a) maintain a registry of hardware options within said apparatus including storing data relating to said options in said storage device; and

(b) provide access to said hardware options to said at least one software application via a plurality of software interfaces.

14. The apparatus of Claim 13, further comprising a network interface operatively coupled to said processor;

wherein said first software is further adapted to communicate with an external entity via said interface.

15. The apparatus of Claim 13, wherein said processor comprises an embedded processor, and said storage device comprises an embedded memory.

16. The apparatus of Claim 13, wherein said storage device comprises a hard disk drive (HDD).

17. The apparatus of Claim 13, wherein said network comprises a multi-channel distribution network of the hybrid fiber coax (HFC) type, and said at least one hardware option comprises DVR functionality.

18. The apparatus of Claim 17, wherein said DVR functionality further comprises PVR functionality.

19. Fault-tolerant CPE adapted for coupling to a cable network, said CPE having a monitor application running thereon, said monitor application being adapted to (i) detect at least one event relating to the operation of one or more software applications running thereon; (ii) selectively log data relating to said event for subsequent use; (iii) control the operation of said CPE based at least in part on said at least one detected event; and (iv) provide a hardware registry accessible by said one or more applications whereby said applications can selectively access and control at least one optional hardware feature of said CPE via a plurality of software interfaces.

20. The CPE of Claim 19, wherein said monitor application is further adapted to communicate with an external entity, said external entity and said monitor application cooperating to selectively control the operation of said CPE.

21. The CPE of Claim 20, wherein said event comprises a resource depletion event, and said act of controlling the operation of said CPE comprises selectively suspending or destroying at least one of said software applications in order to mitigate said resource depletion.

22. A method of operating a cable network having a plurality of client devices operatively coupled thereto, the method comprising:

distributing at least one software application to each of said plurality of devices;

providing at least one hardware registry within each of said devices, said hardware registry containing data relating to a plurality of optional hardware associated with respective ones of said devices;

providing at least one software interface within each of said devices, said software interfaces being configured to interface between said at least one application and at least one of said plurality of optional hardware;

running said at least one software application;

discovering said at least one registry and software interface with said application, and

responsive to said discovering, controlling said at least one hardware option using said application and said at least one interface.

23. A head-end apparatus for use in a cable network, comprising at least one server having a software process running thereon, said software process being adapted to selectively download an application to at least one client device, said application being configured to detect and access records within a hardware registry disposed on said at least one client device, and control at least one hardware feature associated with said device via one or more software interfaces associated with the middleware of said device.

24. The apparatus of Claim 23, wherein said application comprises a DVR-enabled Java-based application, and said at least one hardware feature comprises PVR functionality resident on said at least one client device.

25. The apparatus of Claim 23, wherein said control of said at least one hardware feature is initiated by the middleware of said device.

26. Computer-readable media for use in a cable network, said media comprising a storage medium adapted to store a computer program thereon, said computer program adapted to run on a client device and to:

detect and access records within a hardware registry disposed on said client device; and

control at least one hardware feature associated with said device via one or more software interfaces associated with the middleware of said device.

27. The computer-readable medium of Claim 26, wherein said storage medium comprises a hard disk drive (HDD).

28. A cable network, comprising:

a plurality of client devices, said devices each having at least one controllable hardware feature;

a plurality of registries in operative communication with respective ones of said client devices, said registries each retaining information relating to said at least one controllable feature;

middleware running on respective ones of said client devices, said middleware being adapted to interface with an application and said at least one controllable feature; and

a head-end apparatus comprising at least one server having a software process running thereon, that downloads applications, and said application being configured to detect and access said information within said registries, and control said at least one hardware feature via said middleware.

29. The network of Claim 1, wherein said network comprises a multi-channel distribution network of the hybrid fiber coax (HFC) type.

30. A method of conducting business via a cable network having a plurality of client devices operatively coupled thereto, said devices each having at least one hardware registry containing data relating to a plurality of hardware features and software interfaces for utilizing the same, the method comprising:

distributing at least one software application to said plurality of devices;

running said at least one application on said devices;

discovering said at least one registry and software interfaces with said application, and

responsive to said discovering, controlling at least one of said hardware features using said application.

31. The method of Claim 30, wherein said act of selectively distributing comprises:

distributing said application to substantially all users of said network; and

selectively enabling only a subset of said users to utilize said application in conjunction with said at least one hardware feature based on said parameters.

32. The method of Claim 31, wherein said act of selectively enabling comprises selectively embedding information within said application before distribution thereof.

33. The method of Claim 31, wherein said act of selectively enabling comprises configuring said application such that it:

(i)   accesses information relating to the individual one(s) of said devices on which it is running; and

(ii)   returns said information to a network agent, wherein said agent accesses a database to determine if said utilizing should be enabled.

34.   DVR-enabled CPE for use in a content-based network, wherein said DVR functionality is provided according to the method comprising:

providing at least one hardware registry within said CPE, said hardware registry containing data relating to DVR hardware associated therewith;

providing at least one software interface within said CPE, said software interface being configured to interface between at least one application running on said CPE and said DVR hardware;

running said at least one software application;

discovering said at least one registry and software interface using at least said application, and

responsive to said discovering, controlling said DVR hardware using said application and said at least one interface.

35.   The CPE of Claim 34, wherein said at least one software interfaces comprise APIs.

36.   The CPE of Claim 34, wherein said at least one software interface is associated with OCAP-compliant middleware running on said CPE, and said application comprises a Java-based application adapted to make calls to objects within said middleware.

37.   The CPE of Claim 36, wherein said registry comprises a database having records each with a plurality of fields and each relating to a specific one of a plurality of hardware options, said plurality of hardware options including said DVR hardware.

38.   CPE for use in a content-based network, said CPE having an application-accessible hardware registry database comprising a plurality of records each with a plurality of fields relating to one or more of a plurality of hardware options.

39.   The CPE of Claim 38, wherein said fields comprise:

(i) at least one field to identify the type or class of hardware;

(ii) at least one field having parameters that are specific to the hardware; and

(iii) at least one field having a reference to software interface that can be used to access and manipulate the relevant one(s) of said hardware.

40.   The CPE of Claim 39, said fields further comprising at least one field to uniquely differentiate hardware of the same type.

41.   A method of operating a consumer electronics device having middleware and a hard drive in data communication with said middleware, comprising:

5   providing an application adapted to run on said device and in conjunction with said middleware;

disposing a hardware registry having at least one DVR functionality record disposed therein, said at least one record further identifying at least one API for interface with said DVR functionality;

10   accessing said registry using at least said application; and

controlling said DVR functionality via said at least one API so as to record at least a portion of content streamed to said device from an external source on said hard drive.

42.   The method of Claim 41, wherein said act of accessing said registry comprises (i) discovering said registry; (ii) accessing said registry to identify said at least one DVR record; and

15   (iii) accessing said at least one DVR record to identify said at least one API.

43.   A method of operating a cable network consumer premises device having middleware, a hardware registry having a DVR functionality record identifying an API for interface with said DVR functionality, and a hard drive in data communication with said middleware, the method comprising:

20   providing a DVR-based application adapted to run on said device and in conjunction with said middleware;

accessing said registry using said application to identify said API; and

selectively controlling said DVR functionality via said API so as to store at least a portion of first entertainment content provided to said device on said hard drive for subsequent

25   use by a consumer.

44.   The method of Claim 43, wherein said method further comprises simultaneously:

storing a second at least portion of second entertainment content on said hard drive; and

watching, via viewing apparatus operatively connected to said consumer premises device, third entertainment content.

30   45.   A method of operating a cable network having an MSO and a plurality of CPE coupled thereto, the method comprising:

configuring said CPE with one or more non-standardized hardware options;

disposing entries relating to said one or more options within a hardware registry associated with said CPE, said entries having at least one standardized interface associated therewith; and

operating an MSO application on said CPE, said MSO application accessing said one or more non-standardized options via said standardized interface.

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